

WHAT IS CLAIMED IS:

1. A communications system for transmitting information signals to a first plurality of receivers upon request, and for transmitting parasitic data to a second plurality of receivers, said communications system comprising:

5 a transmitter for transmitting an information signal to at least one of the first plurality of receivers on an assigned frequency selected from among a plurality of available frequencies, in response to a request to transmit received from a user of said communications system; and

10 said transmitter for transmitting parasitic data to at least one of the second plurality of receivers on a heretofore unoccupied frequency selected from among the plurality of available frequencies, and wherein the parasitic data transmission is interrupted if the selected frequency is required for transmitting an information signal to one of the first plurality of receivers.

15 2. The communications system of claim 1 wherein the parasitic data is transmitted in the form of digital data packets.

20 3. The communications system of claim 1 comprising a trunking system, wherein each of the first plurality of receivers includes a transmitting apparatus, and wherein a user of one of the first plurality of receivers requests a frequency assignment over which the information signal is transmitted from the requesting user to at least one other of the first plurality of receivers.

4. The communications system of claim 3 wherein the users of the first plurality of receivers provide public services.

25 5. A trunked radio repeater system including a trunked radio repeater and a plurality of portable radios for communicating bi-directionally with each other via said trunked radio repeater, wherein the trunked radio repeater system further includes plural working channels, said trunked radio repeater system further including a plurality of parasitic receivers operating on a secondary basis to the plurality of portable radios, said trunked radio repeater system comprising:

30 a first controller for receiving a request from one of the plurality of portable radios to transmit an information signal to at least one other of the plurality of portable radios, and in response thereto for assigning a working channel to carry the information signal; and

a second controller responsive to said first controller for transmitting parasitic data to one or more of the plurality of parasitic receivers on an unoccupied working channel.

5 6. The trunked radio repeater system of claim 5 wherein the working channel includes an inbound frequency for carrying the information signal inbound from the requesting portable radio to the trunked radio repeater, and includes an outbound frequency for carrying the information signal from the trunked radio repeater to one or more of the plurality of portable radios.

10 7. The trunked radio repeater system of claim 5 including an inbound and an outbound control channel, wherein the request to transmit is carried over said inbound control channel and wherein the first controller transmits a signal to at least one of the plurality of portable radios on said outbound control channel, and wherein said signal identifies the working channel for carrying the information signal.

15 8. The trunked radio repeater system of claim 5 wherein each one of the plurality of parasitic receivers includes a transmitter for transmitting a parasitic signal to the trunked radio repeater.

20 9. The trunked radio repeater system of claim 8 wherein a signal is transmitted from the trunked radio repeater to at least one of the plurality of parasitic receivers, wherein said signal assigns a working channel on which the parasitic receiver can transmit to the trunked radio repeater.

10. The trunked radio repeater system of claim 9, including an outbound control channel for carrying the signal assigning the working channel assignment.

25 11. The trunked radio repeater system of claim 9 wherein each working channel includes an inbound frequency and an outbound frequency, and wherein the inbound frequency to be used for transmitting to the trunked radio repeater from one of the plurality of parasitic receivers is the inbound frequency of the working channel on which the parasitic receiver last received parasitic data.

30 12. The trunked radio repeater system of claim 5 wherein the second controller transmits an outbound frequency assignment signal to at least one of the plurality of parasitic receivers, in response to which the at least one parasitic receiver tunes to the assigned outbound frequency and thereafter receives the parasitic data on the assigned outbound frequency.

13. The trunked radio repeater system of claim 5 wherein the parasitic data includes address information, wherein each one of the plurality of parasitic receivers has an address, wherein the parasitic data is transmitted to all of the plurality of parasitic receivers, but only the parasitic receiver having an address matching the address information in the parasitic data responds to the parasitic data.

14. The trunked radio repeater system of claim 5 wherein the parasitic data is transmitted in the form of digital data packets.

15. The trunked radio repeater system of claim 5 wherein the parasitic data is broadcast to all of the plurality of parasitic receivers on a predetermined channel, and wherein the parasitic data includes a header portion identifying the one or more of the plurality of parasitic receivers for which the parasitic data is intended.

16. The trunked radio repeater system of claim 5 wherein each one of the plurality of parasitic receivers scans the working channels searching for parasitic data.

17. The trunked radio repeater system of claim 5 wherein when the first controller assigns a working channel that is in use transmitting parasitic data, the parasitic data transmission is terminated and the working channel is relinquished for transmitting an information signal.

18. The trunked radio repeater system of claim 17 wherein the termination of the parasitic data transmission before completion thereof causes the parasitic data to be stored and transmitted at a later time.

19. A method for operating a trunked radio repeater system having a control channel and plural working channels, wherein the working channels are assigned for use by one or more of a first plurality of radios as specified by a control signal carried on the control channel and assigned for use by a second plurality of radios when not in use by one of the first plurality of radios, said method comprising:
operating one or more of the first plurality of radios on one of the plural working channels in response to an assignment signal carried on the control channel;
determining when a working channel is unoccupied; and
operating one or more of the second plurality of radios on an unoccupied working channel.

20. The method of claim 19 wherein when one of the second plurality of radios is operating on a working channel and it is determined that the working channel

is required by one of the first plurality of radios, terminating use of the working channel by the one of the second plurality of radios.

21. The method of claim 19 wherein operation of the second plurality of radios includes receiving parasitic data.

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22. The method of claim 21 wherein in response to termination of the working channel by the one of the second plurality of radios, the information is being transmitted thereby retransmitted at a later time.